National Aeronautics and Space Administration
Goddard Space Flight Center

Inside Wallops

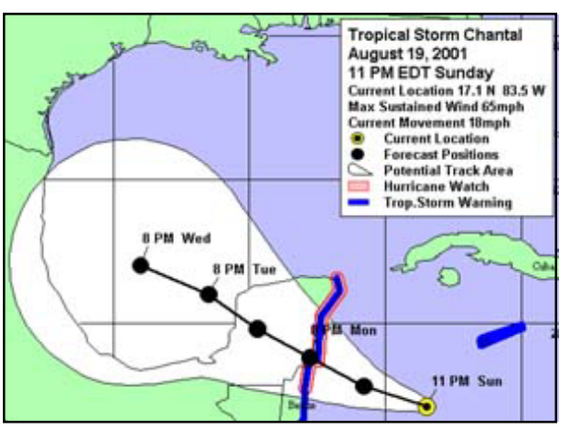
Wallops Flight Facility, Wallops Island, Virginia | Volume XX-01 | Number: 28 | August 20, 2001

NASA Study to Brave Storms in Quest for Better Prediction, Understanding of Hurricanes

As this year's hurricane season gets in full steam, a team of researchers participating in a NASA study is waiting. Armed with airplanes, robotic aerial vehicles and a fleet of sophisticated instruments, they're ready to meet these potentially deadly and destructive storms head-on, gathering data vital to improve hurricane modeling and prediction.

They're part of the Convection And Moisture EXperiment (CAMEX) — the fourth in a series of field research investigations sponsored by the Earth Science Enterprise at NASA Headquarters. The mission brings together researchers from 10 universities, five NASA centers and the National Oceanic and Atmospheric Administration (NOAA).

Based out of the Naval Air Station at Jacksonville, FL., this year's mission will run from Aug. 16 through Sept. 24 - traditionally the most active part of the hurricane season.



NOAA Graphic

During CAMEX, researchers will gather storm data from multiple sources, including aircraft, unpiloted aerial vehicles, satellite observations, ground-based radar and other ground-based sensing instruments.

Unique in this mission is the fact each storm will be monitored simultaneously from near sea level to 65,000 feet. Temperature, pressure, humidity, precipitation, wind speed, lightning and ice crystal sizes are examples of the kinds of information that will be collected. These data are expected to provide additional insight to hurricane researchers and forecasters.

"One reason NASA studies hurricanes is to understand the best way to use information from NASA resources, such as its satellites, to provide better warnings to the American public and people around the world affected by hurricanes," said Robbie Hood, CAMEX mission scientist from NASA's Marshall Space Flight Center.

"During the last CAMEX mission in 1998, we flew over hurricanes and collected a vast amount of data, sampling the hurricanes' upper regions at altitudes of 35,000 feet (10,600 meters) or higher," said Hood.

The CAMEX team plans to fly into hurricanes aboard NASA's ER-2 and DC-8 aircraft, both from Dryden Flight Research Center. Carrying a series of instruments, these aircraft will fly over, through, and around selected hurricanes as they approach landfall in the Caribbean, Gulf of Mexico, and along the East Coast of the United States.

Instruments on the DC-8 will measure the storms' structure, environment and changes in intensity and tracking. The DC-8 will fly into storms at 35,000 to 40,000 feet (12,200 meters). At the same time, the specially equipped ER-2 will fly above storms at 65,000 feet (19,800 meters).

NASA also is funding the flight of several unpiloted aerial vehicles called the Aerosonde Robotic Aircraft, managed in conjunction with the University of Colorado at Boulder.

Small, robotic aircraft designed for collection of meteorological data over oceans and remote areas, the Aerosondes will operate over the North Atlantic Ocean taking observations in the lower atmosphere. In the first use of unpiloted aircraft in an operation of this type, the Aerosondes will skim the ocean surface collecting data on atmospheric temperature, pressure, relative humidity, and winds - data that cannot be obtained by any other method.

The hurricane study is part of NASA's long-term research program dedicated to better understanding the total Earth system and the effects of natural and human-induced changes on our global environment.

Wallops Researchers Eyeing Hurricanes

With the peak of hurricane season upon us, Wallops researchers are participating in several projects to better understand the development of hurricanes, the waves of a hurricane and the impact these massive storms have on the U.S. coastline.

The Upper Air Instrumentation Research Project (UAIRP), led by Frank Schmidlin, Observational Science Branch (Code 972), is participating in the fourth NASA Convection and Moisture Experiment (CAMEX4), a study of tropical cyclone (hurricane) development, tracking, intensification, and landfall impacts using NASA-funded aircraft and surface remote sensing instrumentation.

Operating from Andros Island, Bahamas, a GPS radiosonde instrument is planned to be launched every four hours over the six-week period of CAMEX4 as well as chilled mirror instruments to measure relative humidity.

All measurements will be processed in real time and forwarded over communication links to the National Hurricane Center for their immediate ingestion into the various prediction models.

Schmidlin said, "We expect to compare temperature, relative humidity, wind data with remote instrument measurements from the NASA ER-2 and DC-8, as well as NOAA's P-3 aircraft."

Meanwhile, another Code 972 instrument, the Scanning Radar Altimeter, is flying aboard a NOAA P-3 Hurricane Hunter aircraft. The altimeter is used to measure wave height and direction around a hurricane's eye.

This data is important to commercial mariners to identify safe shipping paths. The data gathered by the altimeter will also assist researchers in developing methods to measure storm surge of a hurricane as it makes land impact.

Finally, the crews with the airborne laser topographic mapper are standing by to assist the U.S. Geological Survey in the mapping of the coastline after a hurricane makes landfall. Researchers examing the impact of hurricanes to the coast use this data.

Wage war on pests—the safe way!

*Try to walk through your garden every day to look for pests—catching them early in their eating spree will prevent a munch-a-thon in your garden.

*Remember that all bugs are not bad bugs, do some research and identify the pest. Learn about its life cycle and feeding habits to determine a common sense plan of attack.

*The simplest control method is the most effective. Handpicking works great for large pests such as tomato worms and Japanese beetles. Drop them into coffee can with water and drown them.

*If handpicking isn't an option, biological controls are your next line of defense. Bacillus thuringiensis (Bt) is a naturally occurring bacterium that stops hungry caterpillars in their tracks. Spray your crops every ten days or after a heavy rain with Bt. Be sure to coat both sides of the plants' leaves.

*Another great biological control is Insecticidal Soap. Many insect pests can be eliminated with a simple soap solution.

If you must resort to a chemical control, read the label to find out if the product is recommended for the pest you are dealing with. Apply the product sensibly. Don't spray on a windy day, use gloves for protection and apply the dosage required. Doubling the dosage won't kill twice as many bugs.

Upcoming Training

NSTC 017, Design for Reliability
The class will be presented by the NASA video teleconferencing system in four 4-hour sessions, in the October to December time frame.

The purpose of this course is to introduce the basic concepts of reliability, to provide an overview of reliability engineering and to improve integration of reliability analysis into current and future aerospace programs.

The benefits include shortening the design and development cycle, reduction in the number of occurrences of time-consuming problems, improved quality and safety, increased product life and improved customer satisfaction.

Target Audience: Managers, engineers and technicians who are working in design, project management, test and systems integration, and require a basic knowledge of reliability to assure a dependable product.

For further information or to register contact: Dwayne Rye on x1884 or by e-mail Dwayne.A.Rye.1@gsfc.nasa.gov

Books, Cassette Tapes , CD's, Video Tapes
Puzzles
Paper Advertising Items
Jewelry Sale

11 a.m. - 1 p.m.
August 22
Bldg. E-2 Training Room

WEMA Supports Recycling

The Wallops Exchange and Morale Association collects plastic and paper bags for the local food bank and thrift stores. Bags may be dropped off to Terry Ewell in the Wallops Logistics Office, Building F-160.

Bring old neckties, chenille bedspreads, wool blankets, thermal blankets, yard goods, bath towels and bath sheets to Bldg. F-160 for distribution to the SPCA and Furnace Town.

The SPCA needs bedding for homeless animals. Furnace Town (non-profit) is a museum and historic site with 13 exhibit buildings located on 25 acres near Snow Hill, MD. Weavers use the recycled materials to make rugs, shawls, runners, mats and more on period looms.

Health Unit News

If you are about to become a new Mom and are planning to breast-feed your baby and would like to continue to do so after returning to work, the NASA Health Unit has a Lactation Room. The room is quiet and private and is available to new Moms to use.

Call the Health Unit, x1336 for more information.

For Sale

Infant car seat/carrier - $25.00
Infant bouncey seat - $15.00 (vibrates)
Contact Sharon Truitt, (757) 787-7290, for details

For Sale

Blue - 4 door, 1991 Buick Park Avenue, power door locks, windows, trunk and seats (leather), passenger-side thermostat, 91,000 miles. $6,000. Call Betty Flowers, (757) 665-4283.

PIG PICKIN'

September 28
5 p.m.
at the Pavilion

Pork, Baked Beans, Cole Slaw, Rolls and Fruit Dessert

Tickets are available at the Exchange Store, Building E-2 (ext. 2020) and at the Rocket Club, Building F-3 (ext.1454)

Wallops Shorts……..

Honor Award Recipients
Congratulations to Bill Phillips, Facilities Management Branch, and Jay Brown, Range and Mission Management Branch, who received Exceptional Service Medals during a recent NASA Honor Award ceremony.

Joe Duke, Acting Chief
Arnold Torres, Director of Suborbital and Special Orbital Projects, has announced the appointment of Joe Duke as acting chief of the Range and Mission Management Office until a permanent placement is named. He will continue to serve as Assistant Director for Projects Support.

CODE RED WORM

There is significant evidence that GSFC's Center Network Environment (CNE) is under a Denial of Service (DoS) attack from the "Code Red" worm.

This DoS is resulting in extremely heavy volumes of network traffic which is saturating and threatening to make inoperable ("crash") the GSFC CNE border routers. If the CNE border routers crash, all outside CNE network connectivity will be temporarily lost. To prevent the border routers from crashing, the DoS attack must be deflected. To reduce or defeat the DoS, GSFC has temporarily blocked Port 80 traffic from entering the GSFC CNE, effective at 5 p.m. EDT August 16.

This action will deter the DoS attack but will also prevent non-GSFC Internet users from accessing GSFC web pages.

For further information contact, Debbie Watson on x2020.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees.

Editor Betty Flowers
Printing Printing Management Office

http://www.wff.nasa.gov